CHAPTER 2 - HYDROLOGIC SOIL GROUP

TABLES

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This chapter includes definitions of the four soil groups that are used in determining hydrologic soil cover complexes used in the Soil Conservation Service method for estimating runoff from rainfall. Table 2-1 lists the group classifications for more than 245 soils.

Soil properties influence the process of generating runoff from rainfall and they must be considered in estimating runoff. The hydrologic paramenter in determining runoff from an individual storm is the minimum rate of infiltration obtained for a bare soil after prolonged wetting. The influence of both the surface and the horizons of a soil are therefor considered. For definition purposes the infiltration rate is the rate at which water enters the soil at the surface and which is controlled by surface conditions, and the transmission rate[1/] is the rate at which the water moves in the soil and which is controlled by the internal properties.

The soils are grouped without considering slope as a variable among the series and without the effect of vegetative cover. In Table 2-1 two soil groups, such as B/D, indicates the drained/undrained situation.

The hydrologic soil groups are defined as follows:

Group A - (Low runoff potential) - Soils having high infiltration rates even when thoroughly wetted, consisting chiefly of deep, well to excessively drained sands and/or gravel. These soils have a high rate of water transmission and would result in a low runoff potential. (Minimum infiltration rate: 0.30 to 0.45 inch per hour.)

Group B - Soils having moderate infiltration rates when thoroughly wetted, consisting chiefly of moderately deep to deep, moderately well to well drained soils with moderately fine to moderately coarse textures. These soils have a moderate rate of water transmission. (Minimum infiltration rate: 0.15 to 0.30 inch per hour.)

Group C - Soils having slow infiltration rates when thoroughly wetted, consisting chiefly of (1) soils with a layer that impedes the downward movement of water, or (2) soils with moderately fine to fine texture and a slow infiltration rate. These soils have a slow rate of water transmission. (Minimum infiltration rate: 0.05 to 0.15 inch per hour.)

Group D - (High runoff potential) - Soils having very slow infiltration rates when thoroughly wetted, consisting chiefly of (1) clay soils with a high swelling potential, (2) soils with a high permanent water table, (3) soils with claypan or clay layer at or near the surface, and (4) shallow soils over nearly impervious materials. These soils have a very slow rate of water transmission. (Minimum infiltration rate: 0 to 0.05 inch per hour.)

For a more detailed discussion of the hydrologic soil grouping see Chapter 7 of Section 4, "Hydrology," National Engineering Handbook, Soil Conservation Service.

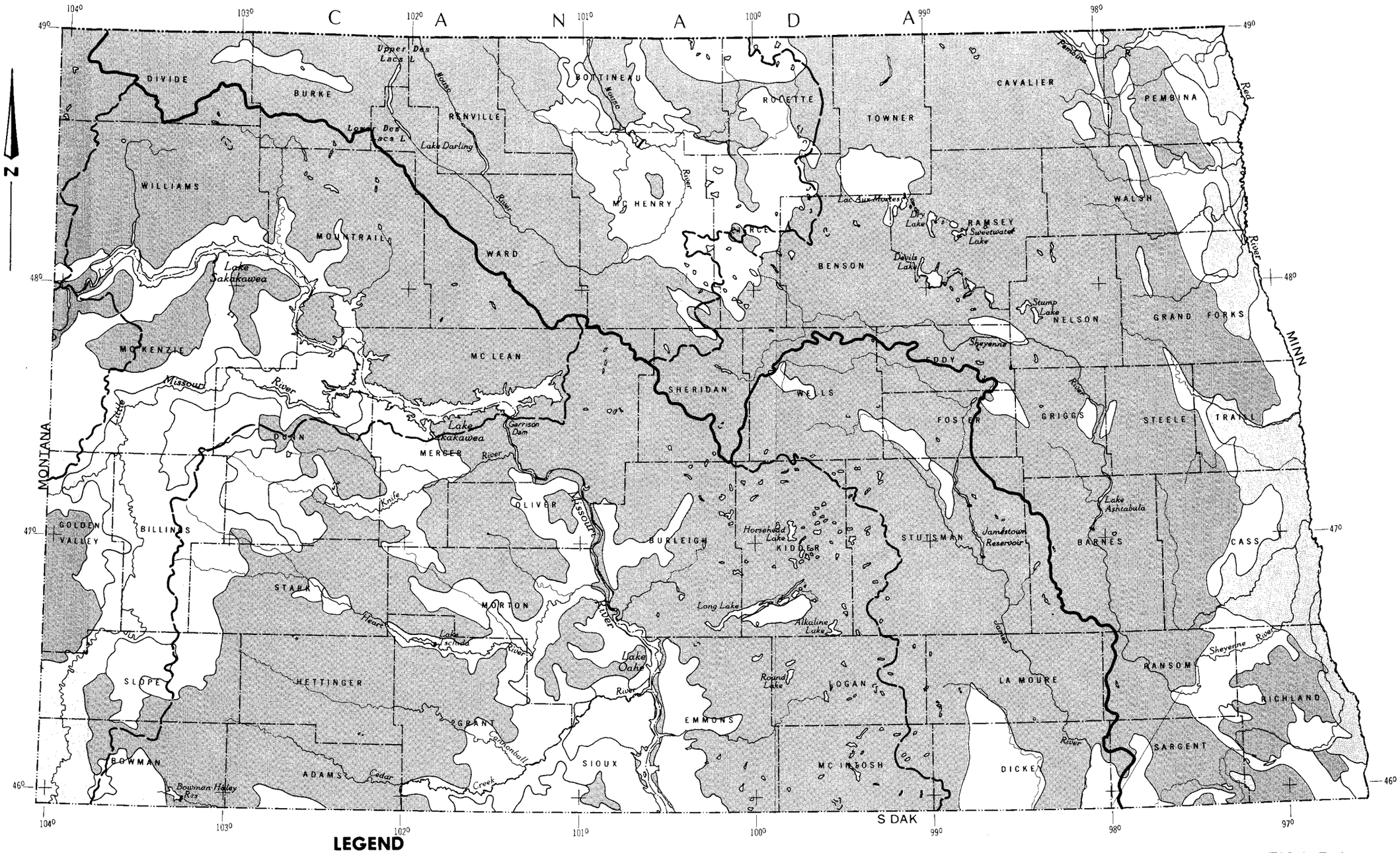
1/ Similar to hydraulic conductivity and permeability rate.

TABLE 2-1--SOIL NAMES AND HYDROLOGIC CLASSIFICATIONS

Aastad	B	Daglum	D	Hamar	A/D
Aberdeen	C	Darnen	B	Hamerly	C
Absher	D	Desart	B	Hamlet	B
Amor	B	Dickey	B	Hanly	A
Antler	C	Dilts	D	Harriet	D
Arikara	B	Dimmick	D	Hattie	C
Arnegard	B	Divide	B	Havre	B
Arveson	B/D	Dooley	C	Havrelon	B
Arvilla	B	Doran	C	Hecla	A
Aylmer	A	Dovray	C/D	Hegne	D
				Heil	D
Baahish	B	Easby	C	Heimdal	B
Banks	A	Eckman	B	Hidatsa	B
Bantry	A/D	Edgeley	C		
Barnes	B	Egeland	B	Inkster	B
Bearden	C	Ekalaka	B		
Bearpaw	C	Embden	B	Karlsruhe	A
Beisigl	A	Emrick	B	Kelvin	C
Belfield	C	Enloe	D	Kensal	B
Benz	D	Eramosh	D	Kittson	C
Beotia	B	Esmond	B	Kloten	D
Binford	B	Exline	D	Korchea	B
Bohnsack	B			Kranzburg	B
Borup	B/D	Fairdale	B	Kratka	B/D
Bottineau	B	Falkirk	B	Krem	A
Bowbells	B	Falsen	A	Kremlin	B
Bowdle	B	Fargo	D		
Boxwell	B	Farland	B	LaDelle	B
Brandenburg	A	Farnuf	B	LaPrairie	B
Brantford	B	Felor	B	Ladner	D
Breien	B	Ferney	D	Lakoa	B
Brisbane	B	Flasher	~~C~~ D	Lallie	D
Bryant	B	Flaxton	B	Lamoure	C
Buse	B	Fleak	C	Langhei	B
		Fordville	B	Lankin	B
Cabba	D	Forman	B	Lanona	B
Cabbart	D	Fossum	A/D	Larson	D
Cashel	C	Fram	B	Lawther	D
Cathay	C	Fulda	C/D	Lefor	B
Cavour	D			Lehr	B
Chama	B	Galchutt	C	Lemert	D
Chanta	B	Gardena	B	Letcher	D
Cherry	B	Gilby	B	Lihen	A
Chinook	B	Glendive	B	Lindaas	C/D
Claire	A	Glyndon	B	Linton	B
Clontarf	B	Golva	B	Lisam	D
Coe	A	Grail	C	Lismore	B
Cohagen	D	Grano	D	Livona	B
Colvin	C/D	Grassna	B	Lohler	C
Cormant	A/D	Great Bend	B	Lohnes	A
Cresbard	C	Grimstad	B	Ludden	D

TABLE 2-1--SOIL NAMES AND HYDROLOGIC CLASSIFICATIONS

Maddock	A	Rolette	C	Viking	D
Magnus	C	Roliss	B/D		
Makoti	B	Rolla	C	Wabek	A
Mandan	B	Rondell	B	Wahpeton	C
Manfred	D	Roseglen	B	Walsh	B
Manning	B	Ruso	B	Walum	B
Markey	A/D	Ryan	D	Wamduska	A
Marmarth	B			Wanagan	B
Marysland	B/D	Sakakawea	B	Warsing	B
Mauvais	C	Savage	C	Watrous	C
Max	B	Schaller	A	Waukon	B
McDonaldsville	C/D	Searing	B	Wayden	D
McKenzie	D	Sen	B	Werner	D
Mekinock	D	Serden	A	Wheatville	B
Metigoshe	B	Seroco	A	Williams	B
Minnewaukan	A/D	Sham	D	Wilton	B
Miranda	D	Shambo	B	Wolf Point	C
Moreau	D	Sinai	C	Wyard	B
Morton	B	Sinnigam	D	Wyndmere	B
Mott	B	Sioux	A	Wyrene	B
		Southam	D		
Nahon	D	Spottswood	B	Yawdim	D
Neche	C	Stady	B	Yegen	B
Niobell	C	Stirum	B/D	Yetull	A
Noonan	D	Straw	B		
Nutley	C	Suomi	C	Zahl	B
		Sutley	B	Zell	B
Oburn	D	Svea	B	Zeona	A
Ojata	C	Swenoda	B		
Olga	C				
Omio	B	Tally	B		
Osakis	B	Tansem	B		
Overly	C	Telfer	A		
		Temvik	B		
Parnell	C/D	Tiffany	B/D		
Parshall	B	Toby	B		
Patent	B	Tolna	B		
Peever	C	Tonka	C/D		
Perella	B/D	Totten	C/D		
Perella - Mod. Wet	B	Towner	B		
Playmoor	C/D	Trembles	B		
Poppleton	A	Tusler	A		
Rauville	D	Ulen	B		
Reeder	B				
Regan	C/D	Vallers	C		
Regent	C	Vanda	D		
Renshaw	B	Vang	B		
Rhame	B	Vang - Wet	B/D		
Rhoades	D	Vebar	B		
Rifle	A/D	Velva	B		
Ringling	A	Venlo	A/D		
Rockwell	B/D	Verendrye	B/D		



LEGEND

HYDROLOGIC GROUP

- A
- B
- C
- D
- REGIONAL BOUNDARY
- SUBREGIONAL BOUNDARY

SCALE 0 10 20 30 40 50 60 70 80 MILES; 0 20 40 60 80 100 120 KILOMETERS

SOURCE: SCS FAMILY OF MAPS 5,S-32,814 (1974) AND INFORMATION FROM SCS FIELD PERSONNEL
ALBERS EQUAL AREA PROJECTION

USDA-SCS-LINCOLN, NEBR. 1979

FIGURE 2-1

GENERAL HYDROLOGIC SOIL GROUP HYDROLOGIC UNIT MAP

NORTH DAKOTA

This map is useful for general planning. For small tracts of land consult a more detailed soil map.